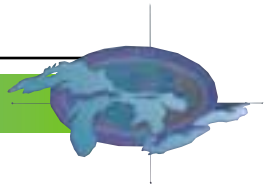

Section 6 Conclusions

This State of the Great Lakes report represents a new way of reporting. Previously we reported on the state of the ecosystem and on the stressors to the system, but our reports lacked any predictable format or framework. The Parties to the Great Lakes Water Quality Agreement recognized that a means to report on the Great Lakes basin ecosystem in a comprehensive, consistent and understandable way was needed. The Parties have moved from a series of ad hoc indicators, reported in the State of the Great Lakes 1995 and 1997, to a refined and accepted suite of 80 indicators. These indicators will be used by the Parties and other organizations to measure the state of the Great Lakes ecosystem now and in the future.

In determining the state of the Great Lakes for this present report, only 33 of the 80 indicators were assessed. What about the others? In some cases the information is available, but the identification of an author or agency to prepare the report is all that is necessary. In other cases, more work is needed in terms of research and refinement, and monitoring programs may need to be initiated in order to implement these indicators.

The results of those indicator assessments have been summarized within each of the six major groups - human health, open and nearshore waters, coastal wetlands, land and land use, societal, and unbounded, along with a summary of the conditions in each Lake and the interconnecting channels.

Human Health

Surface waters of the Great Lakes are still amongst the best sources of drinking water in the world, and they continue to serve a large part of the 33 million people who live in the Great Lakes basin. Protection of water at its source, prior to any treatment, is still one of the best means to assure safe drinking water, not to mention maintenance of a healthy aquatic ecosystem. Advisories related to humans eating fish are still in place on all the Great Lakes, even though chemical contamination is decreasing in most species. Contaminant levels will need to continue to decline for many more years before advisories can be lifted, or, in some areas/cases, even modified. New procedures to standardize testing for *E. coli* will help to improve swimming advisories and help beach operators to better protect human health.

Open and Nearshore Waters

Invasive, non-native aquatic species are the greatest biological threat to Great Lakes aquatic ecosystems. Despite the decline in toxic contamination in many species of Great Lakes fish, as just noted, fish populations continue to be stressed by other causes. These stresses include: weakening of the forage base, food chain disruptions, habitat loss, and competition with, or replacement by, non-native species. Sea lamprey controls since the 1960s, have allowed the rehabilitation of the Great Lakes fishery. However, evidence presented in this report shows that populations of sea lamprey in Northern Lake Huron and the St. Marys River continue to be a problem for fish populations in those areas. The process of habitat improvement through projects such as dam removal and sediment clean-up, as a part of the overall reduction in contaminants, has resulted in increased prey availability for the lamprey as well as increased lamprey spawning habitat. This has created continued dependence on controls well into the future. Suspension of such controls will have an adverse effect on the fisheries.

Coastal Wetlands

Four of the five indicators for this assessment category show that coastal wetlands continue to decline in both quantity and quality. Over two-thirds of the Great Lakes wetlands have already been lost and many of those remaining are threatened by pressures such as development, drainage, and pollution.

Land and Land Use

Urban sprawl is the greatest physical threat to high quality natural areas, rare species, farmland, and open space in the Great Lakes basin. The Great Lakes coastline still retains significant, important, and diverse natural areas such as northern Lakes Michigan and Huron, Georgian Bay, and the St. Marys River. These areas are extraordinarily biologically diverse and deserve special protection.

Societal

This category of indicators requires considerable work. Stewardship of Great Lakes natural resources is widespread throughout the basin and includes urban ecological restoration, rural conservation of open space, and native preservation of species of cultural significance.

Unbounded / Under Construction

Indicators for both terrestrial and aquatic environments identify invasive, non-native aquatic species as the greatest biological threat to the Great Lakes aquatic ecosystem. Further work is required to document the impact of terrestrial non-native species and their subsequent impacts to the ecosystem.

Lake by Lake Assessments

Assessments for the state of the five Great Lakes and Interconnecting Channels show **generally** that conditions are ***mixed***, with some ecosystem components assessed as good, and others assessed as poor.